DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/27/11 has been entered.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. **Claims 1-4, 6, 9-15, 18-23, 25, 27, 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarneel (US 2002/0037351) in view of Takashima (US 2001/0055638) and Roberts (US 4,103,038).**

Regarding Claims 1 and 2: Sarneel discloses a composition comprising 5-30% w/w starch n-alkenyl succinate, wherein starch n- alkenyl succinate is preferably starch C8 (octenyl) succinate, 15% - 40% eggs which are a protein source, and 0%-34% untreated starch [pg. 2, para 0032, 0037]. Sarneel does not disclose whey protein.

Takashima discloses adding thermocoagulation proteins, such as whey protein, to fix the cellular sponge structure formed by coagulation during heating. Thus maintaining the swollen state of the baked good and preventing bake shrinkage. "The thermocoagulation proteins used in the present invention consist of proteins containing albumin and globulin, including, for example, egg white, casein, and whey protein." [para 0026]. As seen throughout the disclosure examples, whey protein may be present from about 0-15 w/w% of the composition.

Roberts discloses an egg substitute containing 30% to 70% whey protein as its major components for the purpose of producing a low cholesterol substitute having the physical properties of eggs when used in recipes [col. 3, lines 30-51].

At the time of the invention it would have been obvious to one of ordinary skill in the that art having the teachings of Sarneel, Takashima, and Roberts before him or her to include whey protein as Takashima, as a complete or partial substitute for the egg contained in the composition in Sarneel because as disclosed in Roberts substituting out the egg for whey protein helps to lower cholesterol content of food product and further whey protein helps to maintain the swollen state of the baked good and helps to prevent baking shrinkage.

Further, the substitution would have been obvious because it is well known in the art that whole eggs, containing yolk, have a high amount of cholesterol and saturated fat. The replacement of the egg portion with whey protein is known to help reduce cholesterol levels in food products. This is further strengthened by the fact that the purpose of Roberts is to produce a low cholesterol egg replacer by using a whey protein based formulation [Roberts col. 6, lines 32-34] and that Sarneel seeks to produce cholesterol-reduced baked products [Sarneel pg.3 para 0047, 0048] by using starch n-octenyl succinate and starch while reducing the amount of egg used in the recipe formulations.

Although Sarneel does not disclose starch n-octenyl succinate at 40-80% or 40% -60%, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the amount of starch n-octenyl succinate for the replacement of a portion of eggs in a batter or dough, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Although Takashima and Roberts do not disclose whey protein in the amounts as recited in the claims, it would have been obvious to vary the amounts of these ingredients depending on the

desired nutrition, flavor, texture, and overall desired properties, following the guidance of Sarneel, Takashima, and Roberts, and through routine experimentation since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Further regarding the formulation of starch octenyl succinate and whey protein, Examiner points to *In re Levin 84* USPQ 232, which takes the position that "new recipes or formulas for cooking food which involve the addition or elimination of common ingredients, or for treating them in ways which differ from the former practice, do not amount to invention merely because it is not disclosed that, in the constantly developing art of preparing no one else ever did the particular thing upon which the applicant asserts his right to patent. In all such cases, there is nothing patentable unless the applicant by a proper showing further establishes a coaction or cooperative relationship between the selected ingredients which produces a new, unexpected, and useful function."

Regarding Claim 3: Sarneel discloses that the starch can be corn (maize) starch [pg. 2, para 0032].

Regarding Claim 4: Sarneel discloses that the starch n-octenyl succinate can be undextrinized, dextrinized, cooked-up, pre-gelatinized, stabilized or mixtures thereof [pg. 2, para 0034].

Regarding Claim 6: Sarneel discloses adding water and sugar (flavoring) [pg. 3, Ex. 2 and 3].

Regarding Claim 9: Sarneel discloses batter containing sugar and baking powder as additional ingredients [pg. 3, Ex. 2 and 3].

Regarding Claim 10: Sarneel discloses that the starch n-octenyl succinate and starch is 11% of the batter [pg. 5, Exp. 2 and 3].

Regarding Claim 12: Sarneel discloses a batter containing water, baking powder (raising agent), and sugar (sweetener) [pg. 4, Ex. 2].

Regarding Claims 13 and 27: Sarneel discloses the batter mixture containing 9.2% untreated starch [pg. 4; Ex. 4] and also discloses 0-34% untreated starch in a batter mixture [pg. 2, para 0032].

Regarding Claim 14: Sarneel discloses corn (maize) starch [pg. 2, para 0032].

Regarding Claim 15: Sarneel discloses preparing a bakery product in the form of pound cake, sponge cake, chiffon cake, cheesecake, fruit cake, layer cake and ginger bread [pg. 2, para 0012, 0037].

Regarding Claims 18 and 23: Sarneel discloses providing the batter mixture of claim 9 and also including other ingredients, baking the mixture [pg. 3, Ex. 2 and 3] and producing a baked product.

Regarding Claim 19: Sarneel discloses batter containing sugar and baking powder as additional ingredients and also discloses natural (untreated) wheat starch (C Gel 20006) [pg. 3, Ex. 2 and 3].

Regarding Claim 20: Sarneel discloses a batter containing water, baking powder (raising agent), and sugar (sweetener) [pg. 4, Ex. 2].

Regarding Claims 21 and 30: Sarneel discloses baking at 180°C [pg. 3, para 0070]. Sarneel does not disclose baking at the temperature of 160 °C (claim 30).

Although Sarneel does not disclose the baking temperature being 160 °C, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the baking temperature to achieve a fully baked product, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Regarding Claims 22 and 31: Sarneel discloses a process of baking the dough in a receptacle [pg. 3, para 0070]. Sarneel does not disclose a non-coated iron, however, it is well known in the bakery art to bake goods in iron pans, whether coated or non-coated. One would have been motivated to do so in order for the baked product to maintain its shape and the iron receptacle will even the heat distribution of the baked product while in the oven.

Regarding Claim 25: Sarneel discloses that the starch n-octenyl succinate and starch is 11% of the batter [pg. 5, Exp. 2].

Regarding Claim 29: Sarneel discloses as discussed in claim 19 and also discloses that the starch can be natural (untreated) corn (maize) starch [pg. 2, para 0032].

3. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarneel (US 2002/0037351), Takashima (US 2001/0055638), and Roberts (US 4,103,038) as applied to claim 1 above and further in view of Gisaw et al. (US 6,558,730).**

Regarding Claim 5: Sarneel discloses as discussed above.

Sarneel does not disclose the starch n-octenyl succinate as derived from high amylopectin source.

Gisaw discloses using a number of different starches within its dough preparation, such as the dry mix in example 1, containing raw corn (untreated) starch and modified starches [col. 8-9]. Gisaw discloses in addition to modified starches such as waxy corn starch (which has high amylopectin) [col. 8, line 37], starch n-octenyl succinate and mixtures thereof. It is common to include starch-based materials in the dough compositions of fabricated snacks. The high amylopectin starch and/or pre-gelatinized starch is used to provide a dough having desired performance properties (e.g., cohesive, non-adhesive, continuously sheetable) [col. 1, lines 28-35 and col. 9, lines 10-19] and to further improve the visco-elastic properties of the dough which is

important for obtaining the desired internal structure as well as the final texture of the snack [col. 4, lines 43-45].

At the time of the invention it would have been obvious to one of ordinary skill in the art having the teachings of Sarneel, Takashima, Roberts, and Gisaw, regarding the starches of the Sarneel, to use varying mixtures of starches as taught by Gisaw, including n-octenyl succinate from waxy corn starch. One would have been motivated to do so to improve the visco-elastic properties of the dough which are important for obtaining the desired internal structure as well as the final texture of the snack [Gisaw; col. 4, lines 43-45] while at the same time providing dough which produces an acceptable snack.

4. **Claims 6, 7, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarneel (US 2002/0037351), Takashima (US 2001/0055638), and Roberts (US 4,103,038) and in further view of Sarneel et al. "Sarneel 04" (WO 04/084640).**

Regarding Claims 6, 7, and 24: Sarneel discloses a composition comprising 5-30% w/w starch C8 (octenyl) succinate, 15% - 40% eggs which are a protein source, and 0%-34% untreated starch [pg. 2, para 0032, 0037]. Sarneel does not disclose the composition in water and optionally vitamins, flavors, edible acids, or their mixtures.

"Sarneel 04" discloses a complete mix comprising the dry mix and a liquid selected from water, savory sauce, sweet sauce, dairy-based liquids, and mixtures thereof. The dry mix further can contain in minor amounts vitamins, flavors, edible acids, and/or mixtures thereof [page 8-9]. The completed mix is based on a weight ratio of dry mix to liquid from 1:0.5 to 1:2 [page 11, para 1-4].

At the time of the invention it would have been obvious to one of ordinary skill in the art having the teachings of Sarneel, Takashima, Roberts, and "Sarneel 04" to modify the dry mix to

include water, vitamins, flavors, and edible acids in order to provide the mix in a liquid form and add nutritional benefits, flavor, and preservatives which improve the palatability and shelf life of the mix.

Further regarding the ratios of dry to liquid ratio, it would have been obvious to choose a specific combination of dry composition to liquid composition would be within the ordinary ingenuity of one of ordinary skill in the art and would depend on the desired characteristics of the bakery product.

5. **Claims 11, 16, 17, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarneel (US 6,663, 909) "Sarneel 909", Takashima (US 2001/0055638), and Roberts (US 4,103,038).**

Regarding Claims 11 and 26: "Sarneel 909"discloses a composition to use in bakery products comprising untreated flour, and starch n-alkenyl succinate, and optionally starch [abstract]. The formulation of the composition consist of 20%-32%w/w untreated flour, 1-4% w/w starch n-octenyl succinate, and 0-10% w/w starch, 15-40% eggs and from 0 to 10% w/w emulsifier [col. 10, claim 17]. Sarneel does not disclose the composition comprising whey protein.

Takashima discloses adding thermocoagulation proteins, such as whey protein, to fix the cellular sponge structure formed by coagulation during heating. Thus maintaining the swollen state of the bake good and preventing bake shrinkage. "The thermocoagulation proteins used in the present invention consist of proteins containing albumin and globulin, including, for example, egg white, casein, and whey protein." [para 0026]. As seen throughout the disclosure examples, whey protein may be present from about 0-15 w/w% of the composition.

Roberts discloses an egg substitute containing 30% to 70% whey protein as its major components for the purpose of producing a low cholesterol substitute having the physical properties of eggs when used in recipes [col. 3, lines 30-51].

At the time of the invention it would have been obvious to one of ordinary skill in the that art having the teachings of "Sarneel 909", Takashima, and Roberts before him or her to include whey protein as Takashima, as a complete or partial substitute for the egg containing composition in Sarneel because as disclosed in Roberts substituting out the egg for whey protein helps to lower cholesterol content of food product and further whey protein helps to maintain the swollen state of the bake good and helps to prevent baking shrinkage.

Although "Sarneel 909" does not disclose the flour being 10% to 20%, one having ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by "Sarneel 909" overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. *In re Malagari* 182 USPQ 549,553.

Although "Sarneel 909" does not disclose the flour being 10% to 15%, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the amount of flour for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Although "Sarneel 909", Takashima, and Roberts do not disclose However, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the amount of whey for modification of egg ingredients in dough or batter, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Regarding Claims 16, 17, and 28: "Sarneel 909" discloses the formulation of the composition consist of 20%-32%w/w untreated flour, 1-4% w/w starch n-octenyl succinate, and 0-

10% w/w starch, 15-40% eggs and from 0 -10% w/w emulsifier [col. 10, claim 17]. "Sarneel 909" discloses that the starch can be natural (untreated) corn (maize) starch [pg. 2, para 0032]. Sarneel does not disclose whey protein.

Takashima discloses adding thermocoagulation proteins, such as whey protein, to fix the cellular sponge structure formed by coagulation during heating. Thus maintaining the swollen state of the bake good and preventing bake shrinkage. "The thermocoagulation proteins used in the present invention consist of proteins containing albumin and globulin, including, for example, egg white, casein, and whey protein." [para 0026]. As seen throughout the disclosure examples, whey protein may be present from about 0-15 w/w% of the composition.

Roberts discloses an egg substitute containing 30% to 70% whey protein as its major components for the purpose of producing a low cholesterol substitute having the physical properties of eggs when used in recipes [col. 3, lines 30-51].

At the time of the invention it would have been obvious to one of ordinary skill in the art having the teachings of Sarneel '909', Takashima, and Roberts to modify the formulation in "Sarneel 909" to include whey protein in place of or in addition to eggs, because it well known in the art that whole eggs containing yolk have a high amount of cholesterol and saturated fat that the replacement of the egg portion with whey protein is known to help reduce cholesterol levels in food products. This is further strengthened by the fact that the purpose of Roberts is to produce a low cholesterol egg replacer by using a whey protein based formulation [col.6, lines 32-34] and that "Sarneel 909" seeks to produce cholesterol-reduced baked products [pg. 3 para 0047, 0048] by using starch n-octenyl succinate and starch while reducing the amount of egg used in the recipe formulations.

Further, it would have been obvious to one skilled in the art to select a combination of ingredients such as starch octenyl succinate, whey protein, and another starch to obtain different

nutritional factors, taste, texture and flavor and based upon the properties the ingredients contribute in formulating low cholesterol food products.

Although the references do not disclose starch octenyl succinate and whey protein in the amounts as recited in the claims, it would have been obvious to vary the amounts of these ingredients depending on the desired nutrition, flavor, texture, and overall desired properties, following the guidance of Sarneel 909", Takashima, and Roberts, and through routine experimentation since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Further regarding the formulation of starch octenyl succinate and whey protein, Examiner points to *In re Levin 84* USPQ 232, which takes the position that "new recipes or formulas for cooking food which involve the addition or elimination of common ingredients, or for treating them in ways which differ from the former practice, do not amount to invention merely because it is not disclosed that, in the constantly developing art of preparing no one else ever did the particular thing upon which the applicant asserts his right to patent. In all such cases, there is nothing patentable unless the applicant by a proper showing further establishes a coaction or cooperative relationship between the selected ingredients which produces a new, unexpected, and useful function."

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is

either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 11 and 26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 8 and 17 of U.S. Patent No. 6663909 B2 in view of U.S. Publication No. 2001/0055638 A1. The references and rejection are incorporated as cited in the Office action dated February 2, 2009.

Response to Arguments

8. Applicant's arguments filed 7/22/11 have been fully considered but they are not persuasive. On page 6 of the Remarks, Applicants assert that because the present claims are intended for use as egg replacements in low-cholesterol products and because Sarneel does not suggest egg substitute or low cholesterol products, one of ordinary skill in the art would not have been prompted to modify the composition of Sarneel.

The Examiner respectfully disagrees. Arguing the intended use of the dry composition is not persuasive because the Applicants' product is being claimed and the particular intended use does not impart patentable weight to the claims. The prior art is suggestive in that it has the elements as claimed in claim 1 which is starch n-octenyl succinate and whey protein. It is the patentability of the product and not its future intended use that must be established.

On page 7 of the Remarks, Applicants assert that the Takashima and Roberts references do not teach or suggest starch n-octenyl succinate. Examiner points out that the Takashima and Roberts references do not have to disclose starch n-octenyl succinate because the references were not relied upon for that teaching, as the primary reference, Sarneel, initially teaches the inclusion of starch n-octenyl succinate. Note in particular that the Takashima and Roberts references were invoked for their disclosure of a whey protein component and were relied upon solely for this disclosure and its efficacy as an egg substitute. Thus Applicants' assertions that Takashima and Roberts do not include starch n-octenyl succinate were not persuasive.

On page 7 Applicants further address the optimization rejections made by the Examiner. Admittedly, the prior art does not teach the range of starch n-octenyl succinate at "40%-80%"as claimed by the Applicants and more specifically does not teach a lower limit of 40%. Rather the prior art teaches an upper limit of 30%. However, it is the position of the Examiner that Applicants have not established any unexpected or superior results. Based upon the range of starch as instantly claimed it would have been obvious to one of ordinary skill in the art to manipulate the amounts of starch to obtain optimal results. Moreover, the art clearly teaches a dry composition as claimed having the same exact components with the only distinction being the amount of starch material. It is noted that the amount of starch varies. However, this would only be a difference in degree and

not of kind. The prior art would also obtain an improved dry product based upon the concentration of the starch and protein, absent a showing of evidence to the contrary.

In response to applicant's argument on page 7, that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In this case, Sarneel discloses a composition containing a modified/treated starch in the form of starch n-alkenyl succinate and protein in the form of eggs. Takashima discloses a pre-mix containing modified starch in the form of pre-gelatinized starches and protein in the form of whey protein. Roberts discloses a composition containing protein in the form of whey protein in place of eggs.

Sarneel discloses that the composition is helpful for making cholesterol reduced bakery products. Takashima discloses that whey protein is a member of a group of thermocoagulating proteins and also discloses that eggs are thermocoagulating proteins. Takashima discloses a desirable cake produced using whey protein in the absence of egg. Roberts discloses replacing egg with whey protein in order to reduce the cholesterol content in food.

The Examiner maintains that hindsight reasoning was not used in forming the rejection because given the disclosure of Sarneel and Takashima and Roberts one of ordinary skill in the art would have been motivated to use whey protein in place of egg protein since Sarneel seeks to produce a reduced cholesterol food, since Takashima discloses that egg protein and whey protein

have similar thermocoagulating properties which allow for proper setting of texture, shape … and since Roberts discloses using whey protein as a substitute for egg protein in order to reduce cholesterol content in food. There are essentially two reasons why one of ordinary skill would substitute out the eggs for the whey protein based upon the references; because whey protein and eggs are obvious variants in their functionality and because the inclusion of whey protein instead of eggs allows for the production of a lower cholesterol product.

For the reasons given above, the rejections are maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FELICIA KING whose telephone number is (571)270-3733. The examiner can normally be reached on Mon- Thu 7:30 a.m.- 5:00 p.m.; Fri 7:30 a.m. - 4:00 p.m. alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Humera Sheikh can be reached on 571-272-0604. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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